

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington DC 20554

In the matter of)
)
Allocation of Spectrum Below) ET Docket No. 94-32
5 GHz Transferred from)
Federal Government Use)

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COMMENTS OF
AMATEUR TELEVISION NETWORK

December 12, 1994

Amateur Television Network
Michael V. Collis
P.O. Box 1594
Crestline Ca. 92325

I. INTRODUCTION

1. Amateur Television Network (ATN) is a non-profit Amateur Radio Organization that specializes in the communications and public service using television. We have designed and operate a linked repeater system (relay) employing seven repeaters in California and one in Nevada. We have affiliate relay stations in different parts of the country and on occasion have linked via satellite. ATN promotes technical experimentation. Such as postage stamp size television transmitters and high altitude balloon experiments with live television. Our organization was the first to connect students at a local school via live television to the Space Shuttle. Our network is used by the National Guard, State and Local Governments through their RACES and ARES divisions. Some of our mountain top repeaters have a remote control camera and last summer two forest fires were spotted early using the camera atop the tower allowing the forest service to quickly extinguish the fire.

The Air and regular National Guard used our network extensively during the Los Angeles riots. They said that the Amateur Television Repeaters were an asset to their operation. During our earthquakes last year our system was again used for damage assessment. (see attached State OES letter) Our links are in the 2.4 GHz band primarily on 2417 MHz modulation 10000F9 point to point. We also have a

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2441 MHz point multipoint for an input to several of our repeaters and we need the separation between the indicated frequencies above.

II. COMMENTS

2. ATN strongly suggests that the 2402-2417 MHz band not be used for general Fixed and Mobile Use as suggested on paragraph 9 of the NPRM. General use on the other bands for discussion would be more appropriate for the following reasons: 1, Part 15 use would cause interference to communications, we only have to look at 902-928 MHz band to see the results. 2, ISM interference can be strong at times, Amateur Television use of the band has seen this on a daily basis. 3, This part of the band is heavily used in the southwest and also in some other cities across the country by amateur television links.

We believe that a new special class of commercial service would be most appropriate for this band with very low potential for interference to incumbent users as well as the proposed new service. Tests have been performed using amateurs to conduct the tests we have found no interference on the several tests performed and found that this new service would be very profitable commercially and to use the same equipment would help law enforcement as well.

A low power level of 20 dBm maximum ERP would be suggested and the rest of the specifications done like part 15 devices. This service should be licensed for portable and mobile use only and no fixed operation. Users would get a license that permits operation over a region rather than a specific address. Uses should be video with 10000F9 modulation to maximize range and minimize interference. Typical uses are helmet cameras for races, and other sporting events. Tiny cameras with transmitter for temporary surveillance and use on a wireless video robot for bomb squads. Some of this is done currently using the nearby ENG band but requires coordination from the local broadcast television station each time it is used. We think that this type of service would best satisfy the requirements of the Reconciliation Act as follows: 1, New commercial use. 2, public safety use and 3, minimum impact to the Amateur Radio Service.

3. We disagree about allowing full freedom of power and frequency allocations as suggested in paragraph 10 of the NPRM. All parties concerned would be better off if some sort of coordination to protect incumbent and future users. We do feel that the experiments to develop the product should be allowed flexibility. We have a proposed block band plan and have included it with our comments. It is designed to maximize commercial access to the bands and allow incumbent amateur radio systems to continue to operate.

4. In-Flight's suggested use of 2390-2400 MHz as indicated on paragraph 12 of the NPRM may be possible in sharing of the band. ATN would like to see QAM-VSB modulation used. This is the future modulation for television with 6 MHz bandwidth. digital compression of the video can support four VHS or better quality video channels and several audio channels. This is currently being implemented in the wireless industry. Equipment is currently available and is manufactured for the MMDS and ITFS bands just above 2.4 GHz.

A valuable benefit to QAM-VSB modulation on the 2390-2400 MHz band is that 4 MHz is available to other users. I would suggest 2 MHz for amateur to be primarily used for point to point low channel capacity FDM or TDM microwave. A 2 MHz block can be reserved in the 2300-2310 MHz band for amateur point to point. Several of these links are already in use. In the case of 2390-2400 MHz two more MHz of spectrum is left for other commercial or amateur uses.

5. In response to Southwestern Bell's suggestion of 2390-2400 MHz use and paired 2300-2310 MHz Band. We disagree. Most of the country is wired and fiber is coming to many neighborhoods. This is the future of telephone and multimedia services. We do agree that some wireless loop service would be very useful in emergency restoration of circuits in disasters and for special events like conventions as temporary extra phone lines would be desirable but costly to do in wire. In paragraph 4 of our comments we said that 2 MHz was available for other users, this may be a place for this type of service. Also a 2 MHz block would be required at 2300-2310 MHz to complete the duplex operation.

6. Reallocation of MDS may be possible as it occupies 6 MHz and some spectrum is left for Amateurs. Sharing of MDS and amateurs would be limited to remote locations for the amateur as amateur transmissions from neighborhoods would cause adjacent channel interference.

7. In response to paragraph 17 of the NPRM. ATN is of the opinion that most amateurs would be willing to share portions of the band if we have exclusive areas for amateur use and keep any commercial use of 2402-2417 MHz at very low power levels for portable or mobile use with no fixed operation. Of primary concern is protection of our existing link systems.

8. ATN strongly agrees with the Reconciliation Act that the Amateur Service not have its systems disrupted. We are disappointed with the report from the Department of Commerce that indicated that amateur activity is light. I have not heard of the Department contacting the American Radio Relay League or any other major amateur microwave organization to survey usage of the band. ATN would like to suggest that all future studies of the amateur microwave bands be done with

notification of the amateur community. The best way would be to contact the amateur organizations that have filed comments in this NPRM.

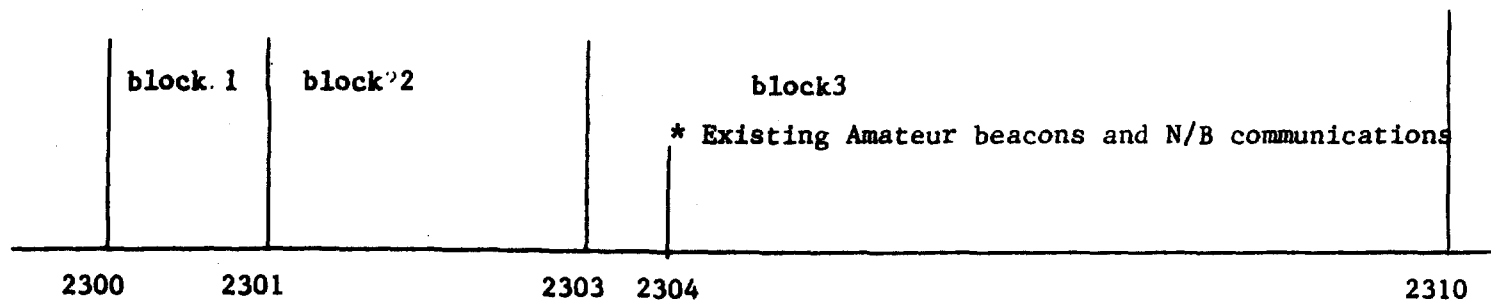
9. In conclusion ATN is of the opinion that some commercial use of the band is possible. The Amateur Community would have liked to see this band used for expansion as well as existing uses and working communication links. Amateurs could keep most of our systems in operation if we can keep a 1 MHz weak signal block in the 2.3 GHz area, a 2 MHz minimum block at 2.3 GHz area for point to point FDM or TDM service with a matching 2 MHz block in the 2390 GHz area and full retention of 2402-2417 MHz shared with very low power commercial mobile- portable service not to exceed 20 dBm effective radiated power. The Amateur Service should be elevated to primary in these blocks. Therefor Amateur Television Network would like to submit its block band plan for your consideration.

Respectfully submitted by

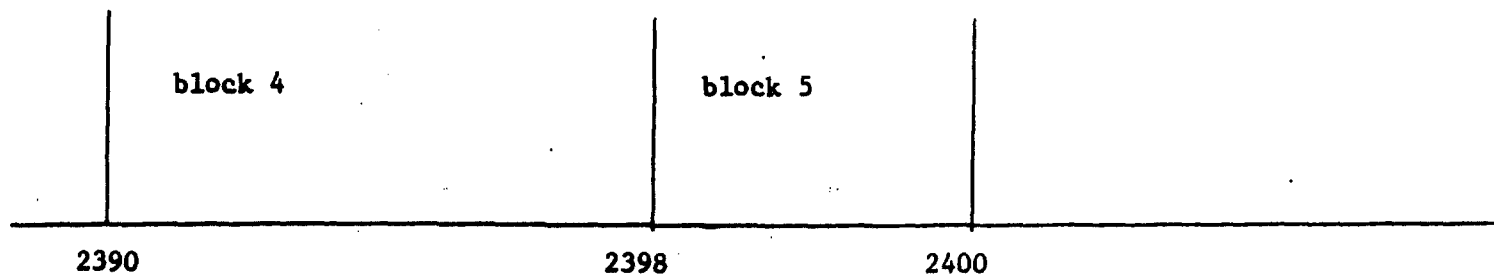
Michael V. Collins

For Amateur Television Network

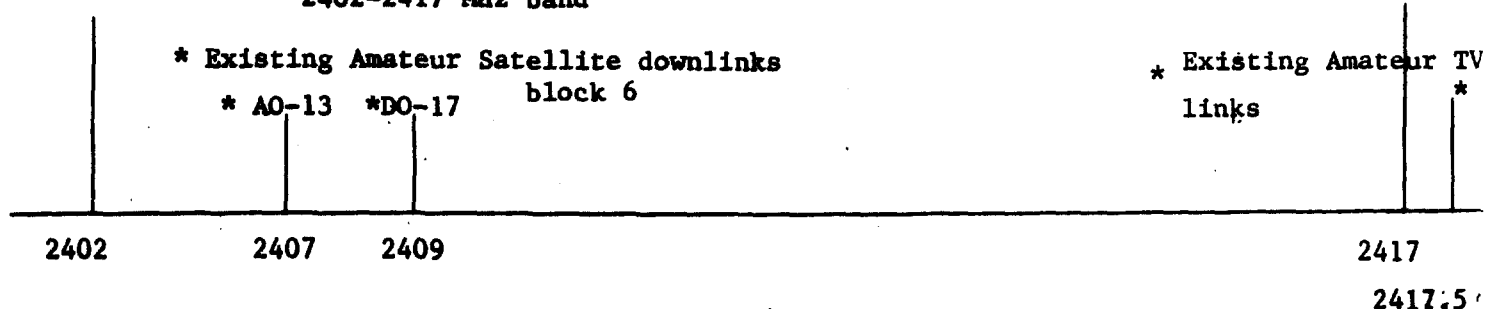
2300-2310 MHz band



2390-2400 MHz band



2402-2417 MHz band



Block 1.....Allocated to Amateur exclusive. To be used for beacons, EME and N/B comm.

Block 2.....Allocated to Amateur shared or exclusive but Amateur primary. To be used for FDM or TDM low channel capacity microwave link, to be paired with block 5.

Block 3.....Allocated to Commercial as primary and Amateur as secondary,

Block 4.....Allocated to Commercial as primary and Amateur as secondary.

Block 5.....Allocated to Amateur shared or exclusive but Amateur primary. To be used for FDM or TDM low channel capacity microwave link, to be paired with block 2.

Block 6.....Allocated to Amateur as primary and create a new service for very low power at 20 dBm maximum effective radiated. This new service will allow for sporting events, race tracks etc. To use helmet and other mobile and portable tiny video camera- transmitters for the event. This service should be licensed to prevent abuse of the service. Another use is law enforcement temporary surveillance and wireless robots for the bomb squad. This service should also be licensed. Block 6 is the area that Amateur Television uses to link ATV relay stations, Mode 10000F9 is used. Retain ISM and part 15 allocations.



OFFICE OF THE DIRECTOR
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916-262-1816 Fax 916-262-1677



June 24, 1994

Mike Collis
Amateur Radio Station WA6SVT
P.O. Box 1594
Crestline, CA 92325

Dear Mr. Collis:

Thank you for your June 2, 1994 letter to Governor Wilson regarding Amateur Radio use during disasters.

On behalf of Governor Wilson and his Office of Emergency Services (OES), we are most appreciative of the outstanding service Amateur Radio operators have provided to emergency government communications. OES has made a substantial investment in Amateur Radio equipment in recognition of their participation and continued support.

Our office has indicated to the Federal Communications Commission that all of the Amateur Radio bands are vital to continued Public Safety/Civil Defense emergency operations in California and has urged it not to reduce the Amateur Radio spectrum any further.

My thanks to you and your fellow "Hams" who are such a vital resource for the people of California.

Sincerely,

A handwritten signature in cursive script that reads "Rich Sfa".

RICHARD ANDREWS, Ph.D.
Director

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